ABSTRACT

Residual birefringence in optical fibers causes polarization mode dispersion (PMD). The invention compensates for this by using a polarization mode dispersion compensator and a polarimeter. The PMD compensator has a variable PMD that may be controlled. The output of the PMD compensator is monitored by a polarimeter. By dithering the wavelength of the optical signal, the polarimeter may provide an accurate measure of the PMD. A controller uses this measurement to control the PMD compensator. The PMD compensating scheme may also be incorporated in a wavelength division multiplexed system with each channel having its own PMD compensator. In addition, a control method may control any polarization mode dispersion compensator based on feedback from a polarimeter to reduce the PMD of the input signal. Instead of using a polarimeter, a Q detector may be used to monitor the output of the PMD compensator. The Q detector provides a measurement of the edge sharpness and, thereby, a measure of the PMD. The controller may use the Q value to control the PMD compensator.